

NEW AND RECONSIDERED MEXICAN ACANTHACEAE

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ABSTRACT

Pseuderanthemum pihuamoense, distinguished by a broad, nontapering wing on the petioles and relatively long bracts, and ***Henrya tuberculosperma***, distinguished by a relatively long, pubescent capsule and large, tuberculate seeds, are described from west-central Mexico. The new combination ***Holographis peloria*** is made based on *Stenandrium pelorium* Leonard, and a new name, ***Louteridium rzedowskii***, is proposed for *L. brevicalyx* Rzedowski. Keys are provided to contrast each taxon with its relatives.

Studies of Acanthaceae from west-central Mexico have resulted in the discovery of several new taxa (Daniel 1980, 1981) and many range extensions of previously described taxa. During the preparation of a treatment of the family for McVaugh's *Flora Novo-Galiciana*, additional new species have been found and several taxonomic alterations and nomenclatural modifications have become necessary. In this report two species are newly described from west-central Mexico, a new combination is made in *Holographis*, and a new name is proposed for *Louteridium brevicalyx* Rzedowski.

Pseuderanthemum pihuamoense T. F. Daniel, sp. nov.

Planta suffruticosa usque ad 6 dm alta. Folia ovata vel elliptica, 50–200 mm longa, 20–70 mm lata, basi late (7–27 mm lata) alata. Bracteae lanceolatae vel subulatae, 3–15 mm longae. Bracteolae subulatae, 1.5–4.0 mm longae. Calyx 4–6 mm longus, glandulosus. Corolla non vidi. Capsula 14–17 mm longa, glandulosa. Semina 3.0–3.5 mm longa. Fig. 1.

Erect subshrubs to 6 dm tall; stems subquadrate, sparsely pubescent with retrorse or antrorse trichomes, 0.2–0.3 mm long, or glabrous above, glabrate below; leaves ovate to elliptic, 50–200 mm long, 20–70 mm wide, mostly 2.5–3.5 times longer than wide, the blades tapering to a broad, nontapering (7–27 mm wide) wing extending to the node, the wing truncate to subcordate at base, the leaf apex acuminate to subfalcate, the surfaces sparsely pubescent; flowers borne in opposite, sessile to subsessile dichasia (these usually reduced to one flower) from upper leaf axils or in an inflorescence of axillary or terminal spikes, the spike axis densely pubescent with stiff, flexuose to antrorse, mostly eglandular trichomes; bracts lan-



FIG. 1. Holotype of *Pseuderanthemum pihuamoense* T. F. Daniel.

FIG. 2. Holotype of *Henrya tuberculosperra* T. F. Daniel.

ceolate to subulate, 3–15 mm long, 0.5–3.0 mm wide, pubescent like the inflorescence axes; bractlets subulate, 1.5–4.0 mm long, 0.3–0.7 mm wide, pubescent like the inflorescence axes; calyx 5-lobed, 4–6 mm long, glandular (the glands often inconspicuous), the lobes subulate, 3.5–4.5 mm long; corolla not seen; capsule 14–17 mm long, sparsely glandular on outer surface; seeds plano-convex, 3.0–3.5 mm long, 3 mm wide, covered with irregular ridges largely composed of tubercles bearing minute barbs.

TYPE: Mexico, Jalisco, ca. 12–13 km sw. of Pihuamo [ca. 19°15'N, 103°25'W], 19 Nov 1970, *McVaugh 24459* (Holotype: MICH!).

PARATYPE: Mexico, Jalisco, 12.8 km sw. of Pihuamo, 6 Dec 1959, *McVaugh & Koelz 1500* (MICH).

Habitat. Steep rocky (limestone) hillsides in dense forest dominated by *Brosimum* at an elevation of about 550 m.

Although the two collections of this species cited above lack corollas, this species appears to belong to *Pseuderanthemum*. It closely resembles other species of this genus in features of the capsule and seed. *Pseuderanthemum pihuamoense* is distinctive among Mexican and Central American species of the genus by the broad, nontapering petiolar wing that is subcordate to truncate at its base. This species

can be distinguished from other species occurring in western Mexico by the following key:

1. Leaf blades forming a conspicuous wing along the petiole, the wing 7–27 mm wide (from edge to edge), not tapering towards the node, truncate to subcordate at base; bracts 3–15 mm long. *P. pihuamoense*
1. Leaf blades merely decurrent along the petiole (sometimes scarcely so), a wing, if present, 1–6 mm wide, tapering towards the node, long-attenuate to acute at base; bracts 0.7–4.0 mm long.
 2. Calyx 5.5–8.5 (–12.0) mm long; thecae 2.5–3.0 mm long; leaves often absent at anthesis, the petioles to 5 mm long, the blade only slightly decurrent along the petiole, if at all. *P. praecox*
 2. Calyx 2.0–4.5 mm long; thecae 1.0–2.2 mm long; leaves present at anthesis, the petioles 5–150 mm long, the blade decurrent almost to the node.
 3. Corolla 10–14 mm long; bracts 1.8–3.0 mm long; bractlets subulate, 1.0–2.5 mm long; calyx 3.5–4.5 mm long; seeds 2.5–3.5 mm long. *P. standleyi*
 3. Corolla 27–36 mm long; bracts 0.7–1.5 mm long; bractlets triangular, 0.5–0.8 mm long, calyx 2–3 mm long; seeds 2.0–2.5 mm long. *P. alatum*

Henrya tuberculosperma T. F. Daniel, sp. nov.

Frutex usque ad 1 m altus. Caules subquadrati glandulosi. Folia petiolata, laminae ovatae, 25–80 mm longae, 10–55 mm latae. Inflorescentia spicata densa. Bracteae lanceolatae vel oblanceolatae, 5–7 mm longae, glandulosae. Bracteolae oblanceolatae, 9–14 mm longae, glandulosae. Corolla luteola vel albida, 14–19 mm longa. Capsula 8–11 mm longa, pubescens. Semina 2.5–3.5 mm longa, glabra, tuberculata. Fig. 2.

Shrubs to 1 m tall; stems subquadrate, evenly pubescent with a mixture of eglandular and glandular trichomes 0.1–0.5 mm long near apex, sparsely pubescent (often in opposite, vertical lines) to glabrate below; leaves petiolate, the petioles to 20 mm long, the blades ovate, 25–80 mm long, 10–55 mm wide, rounded to acute to truncate at base, acute to acuminate at apex, the surfaces sparsely pubescent; flowers borne in dense, axillary or terminal, erect or ascending spikes to 10 cm long, the spike axis glandular; bracts lanceolate to oblanceolate, 5–7 mm long, 1–2 mm wide, glandular; bractlets oblanceolate, 9–14 mm long, glandular, mucronate at apex, the mucro 0.2–0.8 mm long; calyx 2.5–3.0 mm long, the lobes lance-subulate, glandular, subequal, the four primary lobes 2.0–2.5 mm long, the reduced lobe 0.5–1.0 mm long; corolla pale yellow or

whitish with purple, yellow and reddish markings on the upper lip, 14–19 mm long; thecae 1.9–2.2 mm long; capsule 8–11 mm long, pubescent over entire outer surface; seeds 2.5–3.5 mm long, glabrous, plano-convex, the convex surface covered with conical tubercles bearing erect or retrorse barbs, the flat surface smooth to papillose or tuberculate.

TYPE: Mexico, Jalisco, 24–28.8 km sw. of Autlán, 9 Apr 1951, *McVaugh 11946* (Holotype: MICH!; isotype: US!).

PARATYPES: Mexico, Sinaloa, 24 km ne. of Concordia, 25 Mar 1976, *Marin M76-79* (ARIZ). Jalisco, 37.92 km ne. of La Huerta, s. of Autlán, 20 Mar 1982, *Daniel 2123* (ASU, ENCB); 21.2 km al sw. de Atenquique, *Lott et al. 978* (ASU).

Habitat. Rocky slopes in deciduous forest at about 800 m.

Happ (1937) placed considerable emphasis on the relative position of the mucro in defining taxa of *Henrya* in his revision of the genus, resulting in numerous poorly defined species. Although Gibson (1974) generally followed Happ's taxonomy in her treatment of the Guatemalan species of *Henrya*, she noted that many of the taxa probably represented only forms of *H. scorpioides* Nees in DC.

I became interested in the distinctions between *H. scorpioides* and the type species of *Henrya*, *H. insularis* Nees in Benth., during my study of the genus in western Mexico. In his key, Happ (1937) separated these species with similar ranges only by the position and stance of the mucro. Additional differences between the species involving density of the inflorescence, bract shape and length, and capsule length and pubescence were provided in Happ's descriptions. With the addition to herbaria of more material of *Henrya* from Mexico since the time of Happ's revision, the distinctions used by him are no longer valid. There appear to be no significant characteristics to distinguish between the two species.

For these reasons, I believe specimens treated by Happ as *H. insularis* and *H. scorpioides* are part of the same variable species. When these taxa are combined, *H. insularis* (1846) has priority over *H. scorpioides* (1847). *Henrya grandifolia* Fernald, *H. mephitica* Happ, *H. ortegana* Happ, and *H. brevifolia* Happ are also indistinguishable from this species. *Henrya rupicola* Happ and *H. barclayana* Nees in Benth. differ from typical specimens of Happ's *H. scorpioides* only by the mucro's being situated up to 1 mm below the apex. *Henrya pilosa* Happ has pilose-glandular stems, bracts, and bractlets but is otherwise indistinguishable from *H. insularis* in this broad sense.

A thorough monograph of *Henrya* is necessary in order to understand completely this large complex and to assess some of the other dubious species recognized by Happ. Specimens of the species newly described above were unknown to Happ, all of them having

been collected during recent explorations of the Nueva Galicia region. *Henrya tuberculospema* is rather closely related to the *H. insularis* assemblage with which it is sympatric. It consistently differs from the wide-ranging and variable *H. insularis*, however, in characters of the capsule and seed. The two species can be distinguished by the following key:

1. Inflorescence lax, spreading; capsule 5–8 mm long, glabrous or pubescent above the middle (rarely entirely pubescent); seeds 1.5–2.0 mm long, the convex surface with flexuose-spreading or flexuose-appressed, slender, hair-like projections lacking barbs. *H. insularis*
1. Inflorescence dense, erect or ascending; capsule 8–11 mm long, usually pubescent over entire outer surface; seeds 2.5–3.5 mm long, the convex surface covered with stout, conical tubercles bearing barbs. *H. tuberculospema*

A collection (*Palmer 75*) from Durango, treated by Happ as *Henrya flava* (Eastwood) Happ, appears equally similar to the two species discussed above. Fruits are not known from this collection, however, and its disposition must await further collections and study.

Holographis peloria (Leonard) T. F. Daniel, *comb. nov.*—*Stenandrium pelorium* Leonard, *Wrightia* 2:83. 1960. TYPE: Mexico, Durango, Santiago Papasquiario [25°03'N, 105°26'W], Aug 1896. *Palmer 392* (Holotype: US!; isotype: K!).

After initial uncertainty about its generic position, Leonard (1960) described this species in *Stenandrium*. Although the generic distinctions between *Stenandrium* and *Holographis* are subtle at best, this species appears to be more closely related to species of the latter genus. It resembles certain other species of *Holographis* by its caulescent habit (caulescent or acaulescent in *Stenandrium*), slightly exserted stamens (included in *Stenandrium*), linear to oblanceolate, mucronate calyx lobes (lance-subulate, emucronate in *Stenandrium*), zygomorphic corolla (subactinomorphic or rarely zygomorphic in *Stenandrium*), and bilobed stigma (asymmetrically funnel-form in *Stenandrium*). Only one Mexican species of *Stenandrium*, *S. subcordatum* Standley, has a strongly zygomorphic corolla. The zygomorphic corolla of *H. peloria* differs from the corolla of that species by its ovate to elliptic rather than obovate lobes of the upper lip.

Following the key in my recent monograph of *Holographis* (Daniel 1983), *H. peloria* is allied to the group of species with whorled, nonorbicular-spinose leaves and a long (10–18 mm) corolla lacking glands on the outer surface, i.e., *H. pallida* Leonard & Gentry, *H. pueblensis* T. F. Daniel, and *H. ehrenbergiana* Nees. These four species can be distinguished by the following key:

1. Stems lacking retrorse trichomes, the cauline trichomes straight to ascendant-appressed, 0.1–0.7 mm long; laminar margin revolute; bracts triangular to lance-subulate to subulate, emucronate; flowers vertically oriented to anthesis; stamens 9–11 mm long. (See distinctions between *H. pueblensis* and *H. ehrenbergiana* in Daniel, 1983.)
1. Stems with some trichomes retrorse, 0.05–0.3 mm long (sometimes with longer, flexuose trichomes as well); laminar margin flat; bracts lanceolate to ovate to obovate, often mucronate; flowers horizontally oriented at anthesis; stamens 3–4 mm long.
 2. Leaves 1.8–2.5 times longer than wide; bracts 6.5–13 mm long, 3.5–5 mm wide; bractlets 6–10.5 mm long; corolla red, 12–16 mm long; capsule glabrous. *H. peloria*
 2. Leaves 2.5–4 times longer than wide; bracts 3–5 mm long, 1–1.8 mm wide; bractlets 3–4 mm long; corolla white to lavender, 10–12 mm long; capsule pubescent. *H. pallida*.

Louteridium rzedowskii T. F. Daniel, nom. nov. — *Louteridium brevicalyx* Rzedowski, Ciencia (México) 28:53. 1973 (not *L. brevicalyx* A. Richardson, Tulane Stud. Zool. and Bot. 17: 66. 1972).

Unfortunately most species of *Louteridium* are known from few collections. *Louteridium brevicalyx* A. Richardson is represented by only two collections from western Michoacán, and *L. rzedowskii* is known only from the type collection from central Guerrero. Examination of the paratype of *L. brevicalyx* A. Richardson and an isotype of *L. rzedowskii* reveals that these species are very similar morphologically. They can be distinguished by the characters in the following key:

1. Calyx 10–14 mm long, 3-lobed or 5-lobed with 3 large lobes and 2 reduced lobes, the large lobes lanceolate to ovate, 8–11 mm long; capsule with straight, eglandular trichomes 0.2–0.5 mm long. *L. brevicalyx*
1. Calyx 5–8.5 mm long, 3-lobed (reduced lobes absent), the lobes broadly triangular, 3.5–6.5 mm long; capsule glandular, lacking straight, eglandular trichomes. *L. rzedowskii*

Continued exploration in western Mexico should resolve whether or not these plants are indeed separate species or variants of one.

ACKNOWLEDGMENTS

I am grateful to the curators of the following herbaria for loans of specimens: ENCB, K, MICH, MO, US. Funds for field studies were provided by Research Grant 1572 from the American Philosophical Society.

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(Received 6 Jan 1983; accepted 14 Jun 1983.)